

Appl.No. 10/729,725  
Amdt. Dated December 02, 2005  
Reply to Office Action mailed 09/08/2005

### **REMARKS/ARGUMENTS**

1. Starr's Patent 5,668,555 "utilizes a plurality of radar circuits in a rotational arrangement to form multiple circuit arrays." (col. 3 line 60- col 4. line 5). Or alternatively, "a mechanical scanning antenna array" (col. 4 lines5-10), or a "fixed array" (col 4 line 20) of antennae is employed.

In each of these cases the antenna array is too large to be encased within a pill sized capsule.

Also an array of antennae is not possible within a capsule because a plurality of antennae within such close proximity to each other would not function as independent antenna, but would interfere with each other's functionality.

Further moving parts like a "mechanical scanning antenna" could not be powered for a long enough time using such a small battery as fits inside a small capsule, to be of any practical use.

2. Further referring to Starr's Patent, 'Automatic reference point "zeroing"' (col 4 line 30) is not possible without an array of antennae since "zeroing" is accomplished relative to the positions of each antenna in the array. Starr's invention could also include "36 microchips" (col 5 line 1-5).

I think Starr never imagined that his invention would ever be miniaturized into a size small enough to be fitted inside a small capsule.

3. A primary objective of Ouchi's Invention Patent 6,402,686 is "To relieve pain from the patient" (col 1 line 25-30) and "Preferably, the observing system includes an objective optical system and a CCD image sensor" (col 2 line 35). This invention is designed to hold a video camera in place inside a medical patient's gastro-intestinal (GI) system for a length of time.

Holding an ultra-wideband (UWB) sensor in place is not very useful for the purpose of the present invention, because an UWB sensor finishes "observing" its "environment" instantly, and has maximum value when it travels thru the gastro-intestinal system "reporting back" each observation as it moves. That is to say, changes in the "environment" of the UWB sensor provides maximum imaging value if that "environment" is changing and you compare one "picture" of that "environment" to another "picture" of its "environment" at subsequent different time, as it moves thru the

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GI system.

Another way to think of it is, a radar only has value if it detects an object that changes its location from one time to another. This only happens when the object being sensed moves, or the radar moves, or they both move. In my invention, the radar changes place and the detected object remains in place.

Therefore Ouchi's stationary invention, that holds a video camera in place, does not relate to my moving UWB radar sensor invention.

4. Iddan's Patent 6,428,469 was filed in Dec. 1998. At this time, the application of ultra-wideband (UWB) technology for imaging technology was well known, as described in Starr's patent filed in Sept. of 1995.

It never occurred to Iddan and many other researchers at Given Imaging, and at other endoscopy companies, to use UWB imaging within a capsule device. This is evident from the lack of any publication anywhere referring to such a thought or idea.

One possible reason they did not think of this, is because they considered visual light video pictures of the GI system a good-enough or adequate tool for medical people to examine their patients.

Also the large size of proposed UWB medical imaging devices probably prevented anyone from imagining a link between UWB imaging and a pill sized device.

The fact that 9 years past by from the time of Starr's patent filing until I thought of putting an UWB sensor into a capsule endoscopy device, is evidence that this is not an obvious combination. This is a very long time period for such an obvious thought to not occur to someone, especially considering the large number of researches and inventors thinking about capsule endoscopy products at companies like Given Imaging and other very large endoscopy corporations entering the capsule endoscopy market.

There are absolutely no references anywhere to such a combination before I thought of it. So this would be the evidence that it is not obvious.

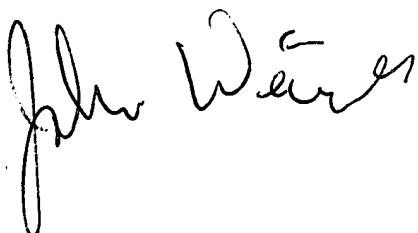
I respectfully reserve the right to re-address any claims canceled above as resources allow.

Thank-you for your time and assistance.

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Respectfully Submitted,

John Weirich

A handwritten signature in black ink, appearing to read "John Weirich". The signature is fluid and cursive, with a large, stylized 'J' at the beginning.

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